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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,706	03/17/2004	Huub Van Aert	27500-203	4824

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Nexsen Pruet Adams Kleemeier LLC
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EXAMINER


ZALUKAEVA, TATYANA

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 11/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/802,706	AERT ET AL. 	
	Examiner	Art Unit	
	Tatyana Zalukaeva	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. **Claims 13-42 are pending in the Application.**

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 35-42 provide for the use of latex particles, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 35-42 are is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Objections

5. Claims 36-38 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim is not presented in a proper form. See MPEP § 608.01(n). Accordingly, the claims 36-38 not been further treated on the merits.

6. Applicants are advised, that if amended and further presented, claims drawn to the method of using a composition will be restricted from the method of making a composition.

7. Claims 13-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 is generally narrative and indefinite, failing to conform with current U.S. practice. It appears to be a literal translation into English from a foreign document and contains idiomatic errors. The transitional word (i.e. between the preamble and the body of claim) "characterized and phrases incorporating it are common in applications of European origin. IN U.S. practice claims containing those words and phrases are rejectable under 35 USC 112.2 when characterization may connote more than mere description (dictionary definition); in scientific parlance characterization may imply one or more physical steps or procedures (e.g. structure determination, elemental analysis, or qualitative tests) to identify a product. Since it is rare that applicant intends more than a mere description when using this language, physical steps are rarely disclosed. As

such the reader may be unsure about the meaning of the wording of the claims, and additionally the scope of the claim is often unclear ("characterized conveys no degree of openness). Usually these troublesome words or phrases can be replaced by the standard transitional words, "having", "comprising", "wherein" and the like.

The recited "making use thereof" in claim 1 is indefinite because it is unclear as to what this use is referred to. Further it is not clear as to what is "being more than 10% lower", as per claims 13 and 28-33.

8. Claims 15 – 23 recite the limitation "said dimmer(s)". There is insufficient antecedent basis for this limitation in the claims.

Further, in claims 20-23 Applicants recite "dimer, is a water soluble oligomer..." The dimmer is already an oligomer containing two repeating units, therefore, a person skilled in the art would not be reasonably apprised and have enough guidance on the metes and bounds of such.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Nishi et al (U.S. 5,525,670).

Nishi discloses a coating composition comprising an acrylic resin particles as component (D) (col.6, lines 45-47). This component is made by emulsion polymerization of monomers (I) and (II) in water (col. 8, lines 12). The list of monomers suitable as monomer (I) is presented in col. 6, lines 65-67 and col. 7, lines 1-4. The list of monomer (II) is given in col.7, lines 10-31. The monomers of the instant claims 22 and 23 are clearly named by Nishi.

Nishi further teaches that anionic cationic or nonionic surfactant having a methacryloyl group or allyl group is used (col. 8, lines 39-49, especially lines 48, 49).

Nishi further teaches that molecular weight can be adjusted using mercaptan compounds or other compounds, **such as α -methylstyrene dimer as a chain transfer agent.** (col. 8, lines 49-52).

With regard to the concentration of surfactant, Nishi provides an example of emulsion polymerization in col. 16, wherein 5.6 parts of RA-1022 (surfactant) were used in a load comprising approximately 100 parts of monomers (see examples 12 and 13). This provides the concentration of surfactant as instantly claimed.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 14-19, 24-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi et al (U.S. 5,525,670) in view of "Polymer Chemistry" by Raymond B. Seymour et al, second edition, pages 337-339.

Although Nishi discloses the concentrations and the presence of components as instantly claimed, he does not specifically indicate that the concentration of surfactant is ***below twice its critical micelle concentration. It is noted here that such limitation can also be read as a zero concentration, i.e .the absence of such.***

However, Seymour in the book provides the theoretical basis of emulsion polymerization. In a typical recipe suitable **for any type** of emulsion polymerization, the

amounts are 100 g of monomer, such as styrene, 180 g of water, **5 g of sodium stearate (soap)** and 0.5 g of potassium persulfate (page 337, 4-th paragraph)

The book further provides rationale why the concentration of surfactant should be below critical micelle concentration (page 337 and 339).

Since from the statistical view point only one half of micelles will contain growing chains at one time, and therefore, a person skilled in the art of emulsion polymerization at the time the invention was made would have found it obvious that the concentration as used by Nishi and as taught by Seymour is adjusted as a concentration lower than twice CMC (critical micelle concentration) in order to maintain balance between the rate of polymerization and conversion with the reasonable expectation of success.

15. Claims 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obayashi et al (U.S.6,048,924)

Obayashi discloses a water born resin (B) as a part of a composition (abstract) obtained by emulsion polymerization (col. 2, lines 60-62). Representative examples of vinyl monomers for emulsion polymerization are acrylic, methacrylic acid, maleic, fumaric and the like (col. 8, lines 58-61), also derivatives of (meth)acrylic acid (col. 9, lines 5-11 and 15-25), as well as aromatic vinyl compounds (col. 9, lines 25,26) and vinyl carboxylates (col. 9, lines 33-35). Usually the polymer is prepared by emulsion polymerization, wherein in order to control molecular weight dimer chain transfer agents are used, such as **alpha-methylstyrene dimer** and the like. (col. 12, lines 17-20), and all possible surfactants, including those anionic, nonionic, and cationic are

used (col. 12, lines 33-40). Of special interest are so called reactive surfactants, having unsaturated double bonds (col. 12, lines 41-43). The amount of surfactant is usually 0.2-10 parts per 100 parts of unsaturated monomers (col. 12, lines 44-48). In examples of Table 5 in col. 26, the concentrations of surfactant are within the ranges as instantly claimed.

Obayashi discloses emulsion polymerization of identical monomers, and suggests all possibilities of dimer chain transfer agents, as instantly claimed, as well as surfactants of the nature and in the amount as instantly claimed. Obayashi does not present an embodiment wherein all conditions are met at once. However, a person skilled in the art based on generic teaching of Obayashi and guided by a knowledge available to those skilled in the art would have found it obvious, motivated by clear suggestion of Obayashi to include the dimer chain transfer agent, as taught by Obayashi in one of his embodiments in order to regulate molecular weight of obtained polymers depending on desired properties, and thus to arrive at the instant claims.

With regard to the properties of the particles that are not disclosed in the references to Nishi and Obayashi, the rejection is made in the sense of *In re Fitzgerald* with the base presumption that the properties governing the polymers of Nishi and Obayashi will be inherently the same as those instantly claimed.

16. Claims 13-34 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over admitted prior art. On page 15, lines 25-37 applicants state the following.

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"Different types of oligomeric macromonomers are suitable for use as chain transfer agents in emulsion polymerization reactions, such as e.g. those containing oligohydroxyethyl methacrylate) macromers as mentioned in **Dupont's WO 99/42505**, clearly give rise to a lower particle size, if compared e.g. with the water-insoluble macromonomers with z-ethyl-hexyl-methacrylate mentioned in WO 99/57167 (Rhodia' Chemie). So according to the method of the present invention water-soluble (purified) oligomers are preferred, as e.g. the water-soluble macromonomers having surface-active graft copolymers with a hydrophilic graft and a hydrophobic main chain, generated by in-situ polymerization as disclosed **by Dupont**.

Although besides dimers also trimers, and even tetramers might be useful in order to reach the objects of the present invention, it can be expected that dimers are superior with respect thereto, due to a better solubility in water and to the fact that pure dimers (A-A) lead to well-defined polymeric compounds.

With regard to the specific percentage of particle size compare to the process with the absence of CTA, the rejection is made in the sense of *In re Fitzgerald*, as discussed above, and also in the sense of *Leinoff v. Louis Milona & Sons, Inc.* 220 USPQ 845 (CAFC 1984), which holds that one who performs the steps of a process must necessarily produce all of its advantages. Mere recitation of a newly discovered property or function that is inherently possessed by the things or steps in the prior art does not cause a claim drawn to those things to distinguish over the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tatyana Zalukaeva whose telephone number is (571) 272-1115. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tatyana Zalukaeva
Primary Examiner
Art Unit 1713



November 19, 2004